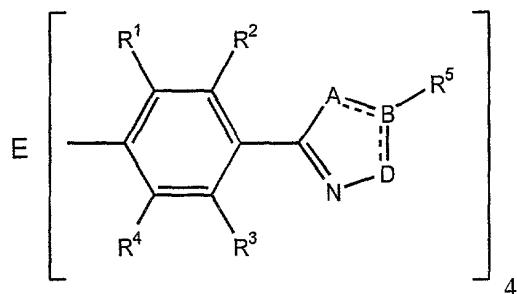


WHAT IS CLAIMED IS:

1 1. A compound of the following formula:



wherein

each of R¹-R⁴ is, independently, H, substituted or unsubstituted C₁₋₆ alkyl, OH, C₁₋₆ alkoxy, N(R⁶)(R⁷), in which each of R⁶ and R⁷ is, independently, H or substituted or unsubstituted C₁₋₆ alkyl, NO₂, CN, or CO₂R⁸, in which R⁸ is H or C₁₋₆ alkyl; and

wherein R⁵ is H, substituted or unsubstituted C₁₋₆ alkyl, substituted or unsubstituted C₂₋₆ alkenyl, substituted or unsubstituted C₂₋₆ alkynyl, substituted or unsubstituted C₆₋₂₀ aryl, substituted or unsubstituted alkylaryl, substituted or unsubstituted C₄₋₂₀ heteroaryl, C₁₀₋₂₀ diarylaminoaryl, or is absent, or B and D, together with R⁵ and R¹¹, are substituted or unsubstituted aryl;

wherein A is O, S, N(R⁹) in which R⁹ is absent, H, substituted or unsubstituted alkyl, or substituted or unsubstituted aryl, N=N, or N=C(R¹⁰) in which the C is adjacent to B and in which R¹⁰ is substituted or unsubstituted alkyl, or substituted or unsubstituted aryl;

wherein B is C or N;

wherein D is N, NH, or C(R¹¹) in which R¹¹ is substituted or unsubstituted alkyl, or substituted or unsubstituted aryl, or B and D, together with R⁵ and R¹¹ are substituted or unsubstituted aryl;

and wherein E is C or Si;

provided that when A is O and D is N, then B is C and the floating double bond is between B and D;

further provided that when A is N(R⁹) and R⁹ is absent, then B is N, R⁵ is absent, D is NH, and the floating double bond is between A and B;

further provided that when A is N=N, then B is C, D is N, and the floating double bond is between B and D;

31 further provided that when A is N=C(R¹⁰), then B is N, R⁵ is absent, D is C(R¹¹), and
 32 the floating double bond is between B and D;

33 further provided that when A is N(R⁹) and R⁹ is H, alkyl, or aryl, then B is C, D is
 34 C(R¹¹), and the floating double bond is between B and D;

35 further provided that when A is O or S and D is C(R¹¹), then B is C and the floating
 36 double bond is between B and D.

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38 2. The compound of claim 1, wherein A is O.

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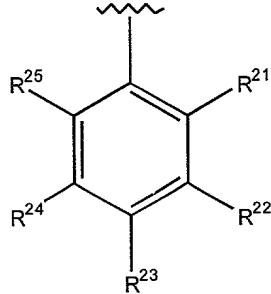
40 3. The compound of claim 2, wherein each of R¹-R⁴ is H.

41

42 4. The compound of claim 2, wherein R⁵ is substituted or unsubstituted aryl, or
 43 substituted or unsubstituted alkylaryl.

44

45 5. The compound of claim 4, wherein R⁵ has the following formula:



50 wherein each of R²¹-R²⁵ is, independently, H, substituted or unsubstituted C₁₋₆ alkyl,
 51 OH, C₁₋₆ alkoxy, N(R²⁶)(R²⁷), in which each of R²⁶ and R²⁷ is, independently, H, substituted
 52 or unsubstituted C₁₋₆ alkyl, substituted or unsubstituted aryl, substituted or unsubstituted
 53 alkylaryl, NO₂, CN, or CO₂R²⁸, in which R²⁸ is H or C₁₋₆ alkyl.

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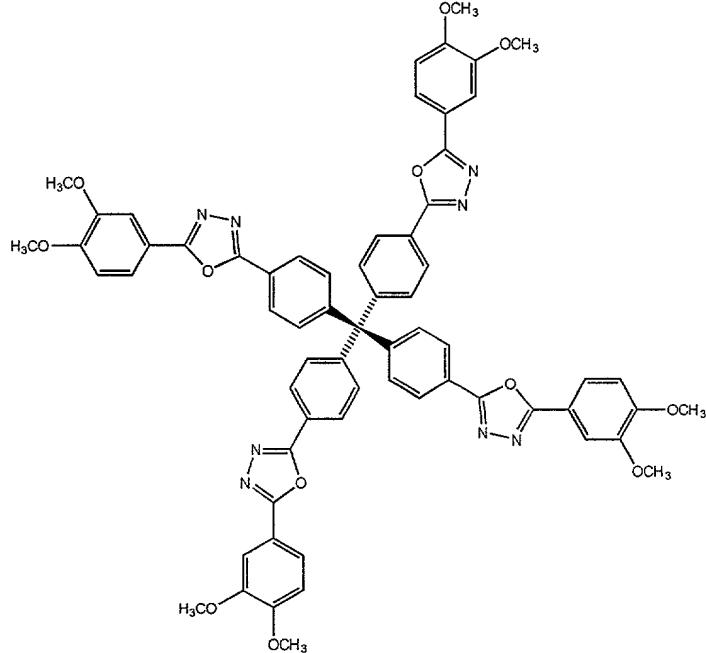
55 6. The compound of claim 5, wherein each of R²¹-R²⁵ is, independently, H or
 56 methoxy.

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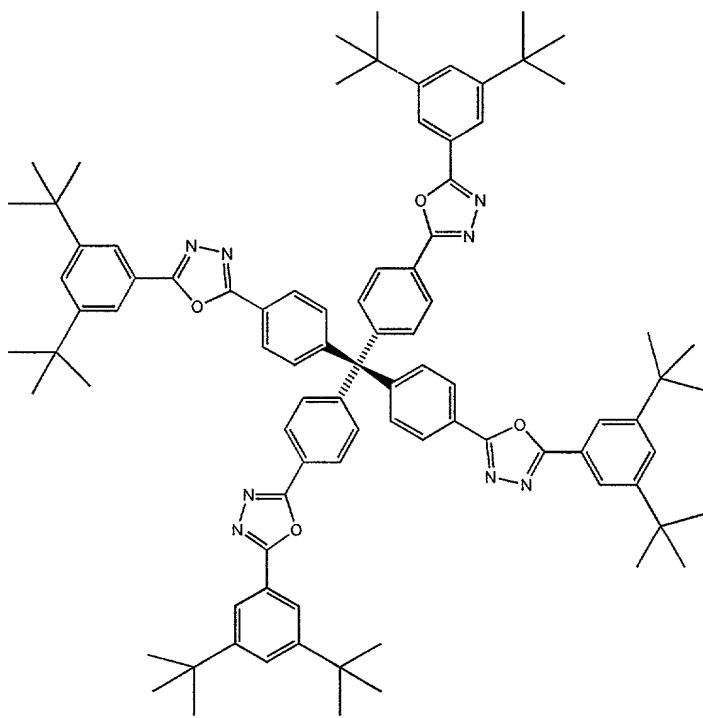
58 7. The compound of claim 5, wherein each of R²¹-R²⁵ is, independently, H or
 59 tert-butyl.

60 8. The compound of claim 5, wherein each of R²¹-R²⁵ is, independently, H or
61 trifluoromethyl.

62
63 9. The compound of claim 1, wherein the compound has the following formula:

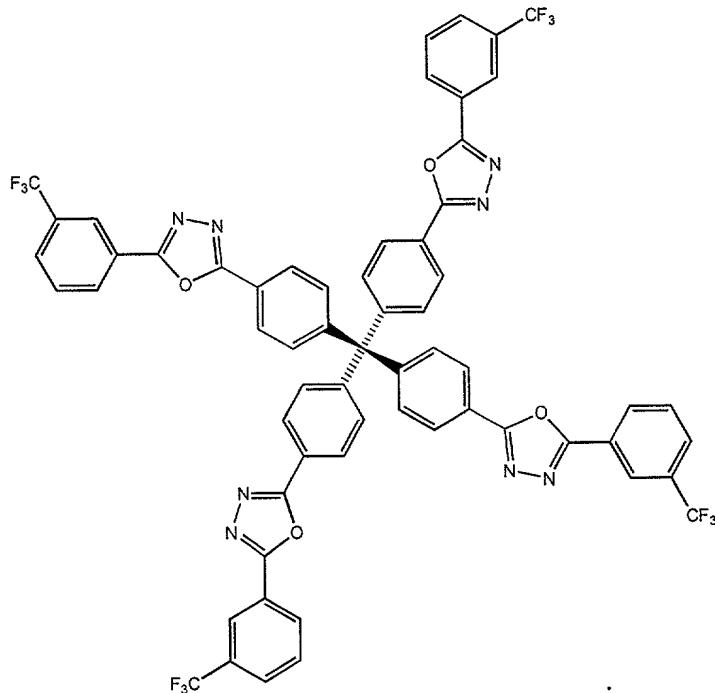


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65 10. The compound of claim 1, wherein the compound has the following formula:



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11. The compound of claim 1, wherein the compound has the following formula:

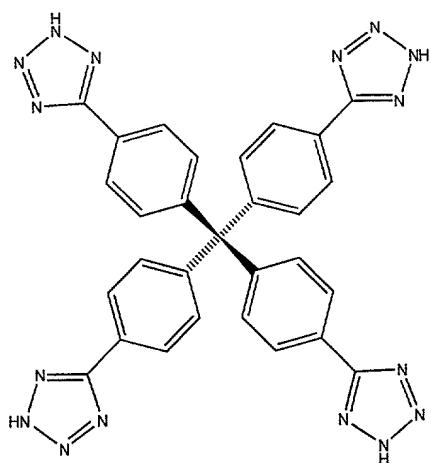


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12. The compound of claim 1, wherein A is N(R⁹), in which R⁹ is absent.

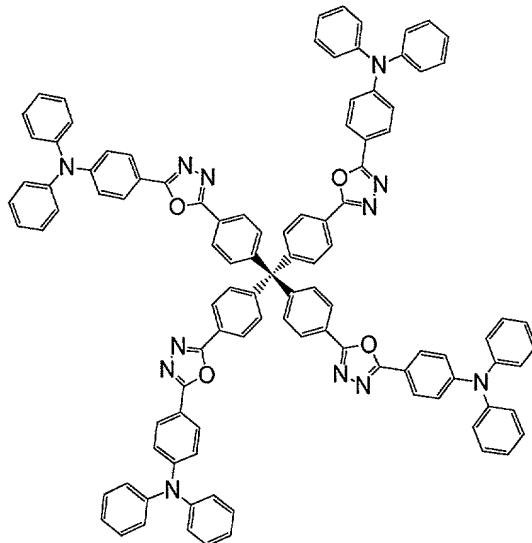
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13. The compound of claim 12, wherein the compound has the following formula:



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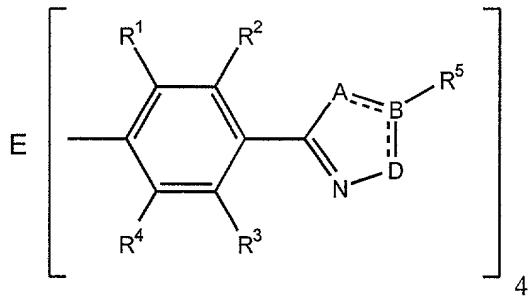
70 14. The compound of claim 1, wherein the compound has the following formula:



71

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73 15. An electroluminescence device comprising a substrate, a hole transporting
74 layer, and emitting layer, and an electron transporting layer, wherein at least one of the hole
75 transporting layer, the emitting layer, and the electron transporting layer comprises a
76 compound having the following formula:



83 wherein

84 each of R¹-R⁴ is, independently, H, substituted or unsubstituted C₁₋₆ alkyl, OH, C₁₋₆
85 alkoxy, N(R⁶)(R⁷), in which each of R⁶ and R⁷ is, independently, H or substituted or
86 unsubstituted C₁₋₆ alkyl, NO₂, CN, or CO₂R⁸, in which R⁸ is H or C₁₋₆ alkyl; and

87 wherein R⁵ is H, substituted or unsubstituted C₁₋₆ alkyl, substituted or unsubstituted
88 C₂₋₆ alkenyl, substituted or unsubstituted C₂₋₆ alkynyl, substituted or unsubstituted C₆₋₂₀ aryl,
89 substituted or unsubstituted alkylaryl, substituted or unsubstituted C₄₋₂₀ heteroaryl, C₁₀₋₂₀
90 diarylaminoaryl, or is absent, or B and D, together with R⁵ and R¹¹, are substituted or
91 unsubstituted aryl;

92 wherein A is O, S, N(R⁹) in which R⁹ is absent, H, substituted or unsubstituted alkyl,
93 or substituted or unsubstituted aryl, N=N, or N=C(R¹⁰) in which the C is adjacent to B and in
94 which R¹⁰ is substituted or unsubstituted alkyl, or substituted or unsubstituted aryl;

95 wherein B is C or N;

96 wherein D is N, NH, or C(R¹¹) in which R¹¹ is substituted or unsubstituted alkyl, or
97 substituted or unsubstituted aryl, or B and D, together with R⁵ and R¹¹ are substituted or
98 unsubstituted aryl;

99 and wherein E is C or Si;

100 provided that when A is O and D is N, then B is C and the floating double bond is
101 between B and D;

102 further provided that when A is N(R⁹) and R⁹ is absent, then B is N, R⁵ is absent, D is
103 NH, and the floating double bond is between A and B;

104 further provided that when A is N=N, then B is C, D is N, and the floating double
105 bond is between B and D;

106 further provided that when A is N=C(R¹⁰), then B is N, R⁵ is absent, D is C(R¹¹), and
107 the floating double bond is between B and D;

108 further provided that when A is N(R⁹) and R⁹ is H, alkyl, or aryl, then B is C, D is
109 C(R¹¹), and the floating double bond is between B and D;

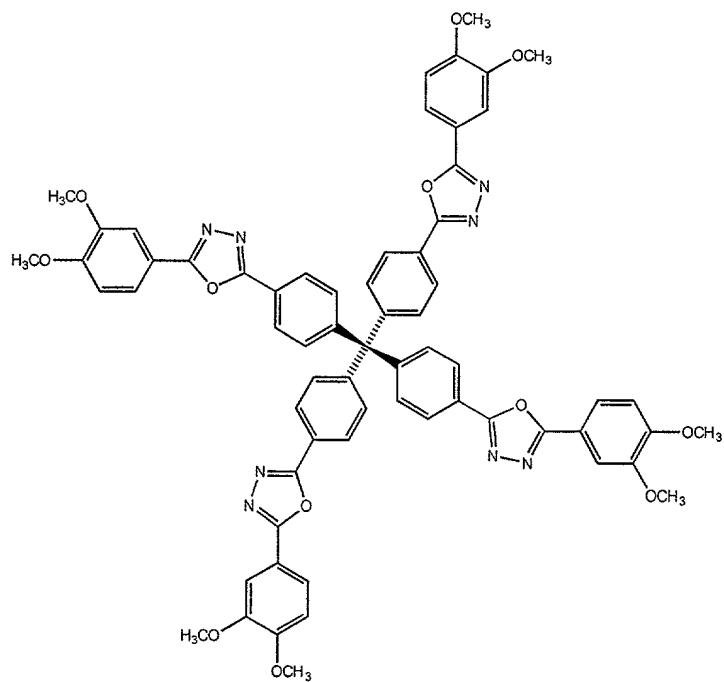
110 further provided that when A is O or S and D is C(R¹¹), then B is C and the floating
111 double bond is between B and D.

113 16. The device of claim 15, wherein A is O, B is C, and D is N.

115 17. The device of claim 16, wherein each of R¹-R⁴ is H.

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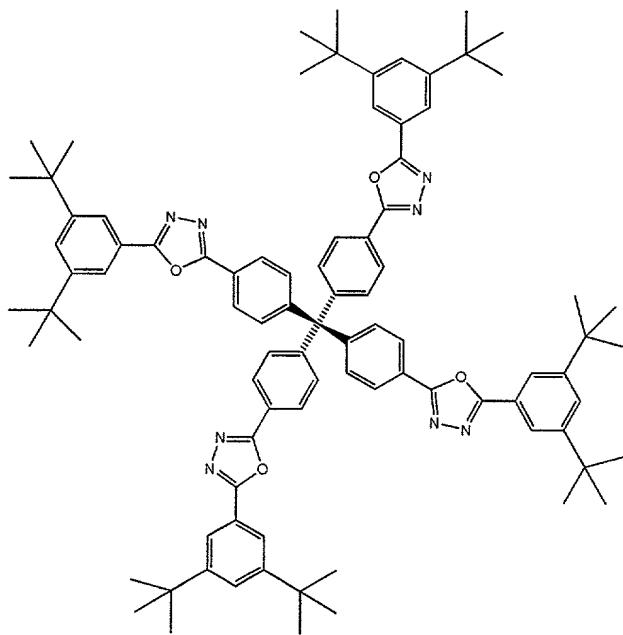
18. The device of claim 15, wherein the compound has the following formula:



DISCLOSURE OF THE INVENTION

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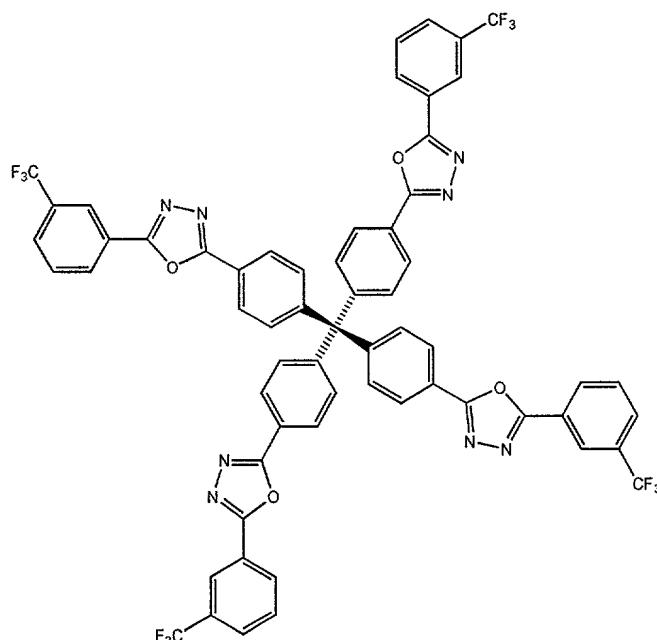
19. The device of claim 15, wherein the compound has the following formula:



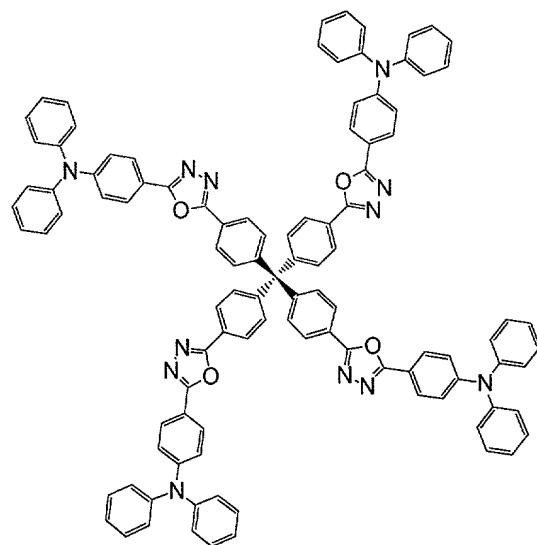
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20. The device of claim 15, wherein the compound has the following formula:



21. The device of claim 14, wherein the compound has the following formula:



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